



AN ISO 9001 : 2008 COMPANY & ACCREDITED LABORATORY AS PER ISO/IEC 17025:2017
4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

TEST RESULTS OF GRADATION FOR WMM

Date: 20-04-2022

Lab ID : CP-RW-2022-06-23-45
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli Saraipalya and Bharathnagara and Surrounding Area in Ward No 06 Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI No 109,110,111.
Comprehensive Development and Improvements to Roads and Drains Rachenahalli and Surrounding Area in Ward No 6 and 7 Byatarayanapura Sub Division Package-2 (Old Annuxure) Go SI No 112 and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 18-04-2022
Type of Mix : WMM (Wet Mix Macadam)
Date of test : 18-04-2022
Oven Dry Weight : 11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	306	306	2.8	97.2	95-100
22.4	2876	3182	28.9	71.1	60-80
11.2	2186	5368	48.8	51.2	40-60
4.75	2251	7619	69.3	30.7	25-40
2.36	1302	8921	81.1	18.9	15-30
0.6	409	9330	84.8	15.2	8-22
0.075	1356	10686	97.1	2.9	0-5

* The results obtained are satisfactory as per standard requirements.

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20/04/2022

Page 1/1
End of Report
Assistant Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024



FOR CIVIL Pro.
KARTHIK RECHAN
Authorized Signatory
Quality Manager

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TESTING | GEO TECHNICAL | PROJECT MANAGEMENT | SURVEYING SERVICES

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TEST RESULTS OF GRADATION FOR WMM

Lab ID : CP-RW-2022-06-23-45 Date: 20-04-2022

Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli Saraipalya and Bharathnagara and Surrounding Area in Ward No 06 Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI No 109,110,111.
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Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda Layout, Ramachandrapura, Bangalore-560013

Customer Reference : BBMP/EE/BTP/WO/02/2021-22

Date of Receipt : 18-04-2022

Type of Mix : WMM (Wet Mix Macadam)

Date of test : 18-04-2022

Oven Dry Weight : 10700 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	306	306	2.9	97.1	95-100
22.4	2876	3182	29.7	70.3	60-80
11.2	2186	5368	50.2	49.8	40-60
4.75	2251	7619	71.2	28.8	25-40
2.36	1302	8921	83.4	16.6	15-30
0.6	409	9330	87.2	12.8	8-22
0.075	850	10180	95.1	4.9	0-5

* The results obtained are satisfactory as per standard requirements.

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Assistant Engineer, Sub Division
Byatarayanapura, Bangalore-560024
B.B.M.P. Report



FOR CIVIL Pro.
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R KARTHIK RECHAN
Authorized Signatory
Quality Manager



TEST RESULTS OF GRADATION FOR WMM

Lab ID : CP-RW-2022-06-23-45 Date: 23-04-2022

Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli Saraipalya and Bharathnagara and Surrounding Area in Ward No 06 Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI No 109,110,111.
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Customer Reference : BBMP/EE/BTP/WO/02/2021-22

Date of Receipt : 21-04-2022

Type of Mix : WMM (Wet Mix Macadam)

Date of test : 21-04-2022

Oven Dry Weight : 10000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	287	287	2.9	97.1	95-100
22.4	2755	3042	30.4	69.6	60-80
11.2	2096	5138	51.4	48.6	40-60
4.75	2176	7314	73.1	26.9	25-40
2.36	1064	8378	83.8	16.2	15-30
0.6	720	9098	91.0	9.0	8-22
0.075	801	9899	99.0	1.0	0-5

* The results obtained are satisfactory as per standard requirements.

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Page 11

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

TEST RESULTS OF GRADATION FOR WMM

Date: 23-04-2022

Lab ID : CP-RW-2022-06-23-45
Project Name : Package-3, Includes 5 Works
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and Bharathnagara and Surrounding Area in Ward No 06 Byatarayanapura
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Comprehensive Development and Improvements to Roads and Drains
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Sub Division Package-2 (Old Annuxure) Go SI No 112 and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 21-04-2022
Type of Mix : WMM (Wet Mix Macadam)
Date of test : 21-04-2022
Oven Dry Weight : 11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	409	409	3.7	96.3	95-100
22.4	3025	3434	31.2	68.8	60-80
11.2	2805	6239	56.7	43.3	40-60
4.75	1598	7837	71.2	28.8	25-40
2.36	1101	8938	81.3	18.7	15-30
0.6	710	9648	87.7	12.3	8-22
0.075	810	10458	95.1	4.9	0-5

* The results obtained are satisfactory as per standard requirements.

23/04/2022
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B.B.M.P. Bangalore-560024

23/04/2022
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Byatarayanapura Sub Division
B.B.M.P. Bangalore-560024



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Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 21-04-2022
Type of Mix : WMM (Wet Mix Macadam)
Date of test : 21-04-2022
Oven Dry Weight : 11450 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	300	300	2.6	97.4	95-100
22.4	3205	3505	30.6	69.4	60-80
11.2	2091	5596	48.9	51.1	40-60
4.75	1647	7243	63.3	36.7	25-40
2.36	1287	8530	74.5	25.5	15-30
0.6	904	9434	82.4	17.6	8-22
0.075	1496	10930	95.5	4.5	0-5

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23-04-2022
2022-04-23
2022-04-23

Page 1/1
End of Report
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Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 21-04-2022
Type of Mix : WMM (Wet Mix Macadam)
Date of test : 21-04-2022
Oven Dry Weight : 12000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	510	510	4.3	95.8	95-100
22.4	3587	4097	34.1	65.9	60-80
11.2	2410	6507	54.2	45.8	40-60
4.75	1871	8378	69.8	30.2	25-40
2.36	1095	9473	78.9	21.1	15-30
0.6	810	10283	85.7	14.3	8-22
0.075	1156	11439	95.3	4.7	0-5

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2022/04/23
B.B.M.P Bangalore-560024

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End of Report
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Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 21-04-2022
Type of Mix : WMM (Wet Mix Macadam)
Date of test : 21-04-2022
Oven Dry Weight : 10500 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	298	298	2.8	97.2	95-100
22.4	2078	2376	22.6	77.4	60-80
11.2	2314	4690	44.7	55.3	40-60
4.75	2098	6788	64.6	35.4	25-40
2.36	1987	8775	83.6	16.4	15-30
0.6	547	9322	88.8	11.2	8-22
0.075	678	10000	95.2	4.8	0-5

* The results obtained are satisfactory as per standard requirements.

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End of Report



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 Date of Receipt : 21-04-2022
 Type of Mix : WMM (Wet Mix Macadam)
 Date of test : 21-04-2022
 Oven Dry Weight : 10000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	12	12	0.1	99.9	95-100
22.4	2258	2270	22.7	77.3	60-80
11.2	2315	4585	45.9	54.2	40-60
4.75	1799	6384	63.8	36.2	25-40
2.36	1974	8358	83.6	16.4	15-30
0.6	654	9012	90.1	9.9	8-22
0.075	659	9671	96.7	3.3	0-5

* The results obtained are satisfactory as per standard requirements.

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 FOR CIVIL Pro.
 R KARTHIK RECHAN
 Authorized Signatory
 Quality Manager
 CIVIL PRO BANGALORE
 Sig.....
 Date.....
 Page 1 of 1
 End of Report
 Assistant Engineer Sub Division
 Byatarayanapura Sub Division
 B.B.M.P Bangalore-560024

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4, 7TH MAIN MALLESWARAM, BANGALORE - 3

Certificate No.: TC-5548

TEST REPORT OF AGGREGATE IMPACT VALUE

IS: 2386 Part IV

Lab ID : CP-RW-2022-06-23-45 Date: 06-04-2022
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli Saraipalya and
Bharathnagara and Surrounding Area in Ward No 06 Byatarayanapura Sub
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2 (Old Annuxure) Go SI No 112 and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 04-04-2022
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test : 04-04-2022

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	300.2	300.2
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	73.9	74.0
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	225.9	225.8
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.4	0.4
5	Aggregate impact value	(B/A)*100	24.6	24.7
6	Aggregate impact value (Mean of two tests)	Percentage	24.6	

* The results obtained are satisfactory as per standard requirements.

2022/04/06
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2022/04/06



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Quality Manager

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End of Report



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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

TEST REPORT OF AGGREGATE IMPACT VALUE

IS: 2386 Part IV

Date: 06-04-2022

Lab ID : CP-RW-2022-06-23-45
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Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 04-04-2022
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test : 04-04-2022

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	305.8	306.2
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	65.8	63.7
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	239.5	242.1
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.5	0.4
5	Aggregate impact value	(B/A)*100	21.52	20.80
6	Aggregate impact value (Mean of two tests)	Percentage	21.2	

* The results obtained are satisfactory as per standard requirements.

[Handwritten signature]
Assistant Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024



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Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 04-04-2022
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test : 04-04-2022

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	299.7	300.2
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	62.9	60.5
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	236.5	239.5
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.3	0.2
5	Aggregate impact value	(B/A)*100	20.99	20.15
6	Aggregate impact value (Mean of two tests)	Percentage	20.6	

* The results obtained are satisfactory as per standard requirements.

20.05.2022
20.05.2022

20.05.2022
Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P. Bangalore
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Date.....

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Certificate No: TC-4568

TEST REPORT OF AGGREGATE IMPACT VALUE
IS: 2386 Part IV

Lab ID : CP-RW-2022-06-23-45 Date: 09-04-2022
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli Sarapalya and
Bharathnagara and Surrounding Area in Ward No 96 Byatarayanapura Sub
Division Package-3 (Old Annuxure-2) Go SI No 109,110,111. Comprehensive
Development and Improvements to Roads and Drains Rachenahalli and
Surrounding Area in Ward No 6 and 7 Byatarayanapura Sub Division Package-
2 (Old Annuxure) Go SI No 112 and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 07-04-2022
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test : 07-04-2022

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	301	301
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	83	79
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	217.7	221.5
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.3	0.5
5	Aggregate impact value	(B/A)*100	27.6	26.2
6	Aggregate impact value (Mean of two tests)	Percentage	26.9	

* The results obtained are satisfactory as per standard requirements.

20.05.20
Assistant Executive Engineer
Byatarayanapura Sub Division
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Page 1/1
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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

TEST REPORT OF AGGREGATE IMPACT VALUE IS: 2386 Part IV

Date: 09-04-2022

Lab ID : CP-RW-2022-06-23-45
Project Name : Package-3. Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli Saraipalya and
Bharathnagara and Surrounding Area in Ward No 06 Byatarayanapura Sub
Division Package-3 (Old Annuxure-2) Go SI No 109,110,111. Comprehensive
Development and Improvements to Roads and Drains Rachenahalli and
Surrounding Area in Ward No 6 and 7 Byatarayanapura Sub Division Package-
2 (Old Annuxure) Go SI No 112 and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 07-04-2022
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test : 07-04-2022

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	305.5	305.9
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	72.5	71.7
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	232.4	233.7
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.6	0.5
5	Aggregate impact value	(B/A)*100	23.7	23.4
6	Aggregate impact value (Mean of two tests)	Percentage	23.6	

* The results obtained are satisfactory as per standard requirements.

(Signature)
20.04.2022
20.04.2022

20.04.2022
Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore
Page 1/1
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TEST REPORT OF AGGREGATE IMPACT VALUE IS: 2386 Part IV

Date: 09-04-2022

Lab ID : CP-RW-2022-06-23-45
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli Saraipalya and
Bharathnagara and Surrounding Area in Ward No 06 Byatarayanapura Sub
Division Package-3 (Old Annuxure-2) Go SI No 109,110,111. Comprehensive
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Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 07-04-2022
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test : 07-04-2022

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	301.5	301.9
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	72.5	71.7
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	228.4	229.7
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.6	0.5
5	Aggregate impact value	(B/A)*100	24.0	23.7
6	Aggregate impact value (Mean of two tests)	Percentage	23.9	

* The results obtained are satisfactory as per standard requirements.

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2022/04/09
2022/04/09

Page 1 of 1
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024



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Certificate No.: TC-5548

DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE (IS 2386 (Part 1) 1963 (RA 2007))

Lab ID : CP-RW-2022-06-23-45 Date: 06-04-2022
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli
Saraipalya and Bharathnagara and Surrounding Area in Ward No 06
Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI
No 109,110,111. Comprehensive Development and Improvements to
Roads and Drains Rachenahalli and Surrounding Area in Ward No 6
and 7 Byatarayanapura Sub Division Package-2 (Old Annuxure) Go
SI No 112 and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel
Pillegowda Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 04-04-2022
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test : 04-04-2022

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	12.8%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.5%	
Combined Flakiness and Elongation Index for WMM	25.3%	

* The results obtained are satisfactory as per standard requirements.

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Page 15
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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE (IS 2386 (Part 1) 1963 (RA 2007))

Lab ID : CP-RW-2022-06-23-45 Date: 06-04-2022
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli
Saraipalya and Bharathnagara and Surrounding Area in Ward No 06
Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI
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and 7 Byatarayanapura Sub Division Package-2 (Old Annuxure) Go
SI No 112 and 113.
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Pillgowda Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 04-04-2022
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test : 04-04-2022

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	12.5%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.1%	
Combined Flakiness and Elongation Index for WMM	24.6%	

* The results obtained are satisfactory as per standard requirements.

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20.04.2022

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20.04.2022



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Date: 06-04-2022

Lab ID : CP-RW-2022-06-23-45
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli
Saraipalya and Bharathnagara and Surrounding Area in Ward No 06
Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI
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and 7 Byatarayanapura Sub Division Package-2 (Old Annuxure) Go
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Pilligowda Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 04-04-2022
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test : 04-04-2022

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	10.9%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	11.7%	
Combined Flakiness and Elongation Index for WMM	22.6%	

* The results obtained are satisfactory as per standard requirements.

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B.B.M.P Bangalore-560024
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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE (IS 2386 (Part 1) 1963 (RA 2007))

Lab ID : CP-RW-2022-06-23-45 Date: 09-04-2022
 Project Name : Package-3, Includes 5 Works
 Improvements to Roads and Drains at Thanisandra Dasarahalli
 Saraipalya and Bharathnagara and Surrounding Area in Ward No 06
 Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI
 No 109,110,111. Comprehensive Development and Improvements to
 Roads and Drains Rachenahalli and Surrounding Area in Ward No 6
 and 7 Byatarayanapura Sub Division Package-2 (Old Annuxure) Go
 SI No 112 and 113.
 Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel
 Pillegowda Layout, Ramachandrapura, Bangalore-560013
 Customer Reference : BBMP/EE/BTP/WO/02/2021-22
 Date of Receipt : 07-04-2022
 Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
 Date of test : 07-04-2022

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	11.7%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	10.4%	
Combined Flakiness and Elongation Index for WMM	22.1%	

* The results obtained are satisfactory as per standard requirements.

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 Assistant Engineer
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 B.B.M.P Bangalore
 End of Report



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HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL | ENVIRONMENTAL
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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE (IS 2386 (Part 1) 1963 (RA 2007))

Lab ID : CP-RW-2022-06-23-45 Date: 09-04-2022
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli
Saraipalya and Bharathnagara and Surrounding Area in Ward No 06
Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI
No 109,110,111. Comprehensive Development and Improvements to
Roads and Drains Rachenahalli and Surrounding Area in Ward No 6
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SI No 112 and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel
Pillgowda Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 07-04-2022
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test : 07-04-2022

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	12.8%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.5%	
Combined Flakiness and Elongation Index for WMM	25.3%	

* The results obtained are satisfactory as per standard requirements.

2022/04/09
Assistant Executive Engineer
Byatarayanapura Sub Division
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Page 1/1
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Certificate No.: TC-5548

DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE (IS 2386 (Part 1) 1963 (RA 2007))

Lab ID : CP-RW-2022-06-23-45 Date: 09-04-2022
Project Name : Package-3, Includes 5 Works
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Pillagowda Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/FE/BTP/WO/02/2021-22
Date of Receipt : 07-04-2022
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test : 07-04-2022

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	11.8%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.5%	
Combined Flakiness and Elongation Index for WMM	24.3%	

* The results obtained are satisfactory as per standard requirements.

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Certificate No.: TC-5548

DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE (IS 2386 (Part 1) 1963 (RA 2007))

Lab ID : CP-RW-2022-06-23-45 Date: 13-04-2022
Project Name : Package-3, Includes 5 Works
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Pillegowda Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 11-04-2022
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test : 11-04-2022

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	10.4%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	11.9%	
Combined Flakiness and Elongation Index for WMM	22.3%	

* The results obtained are satisfactory as per standard requirements.

Handwritten signature and stamp in Kannada script.



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Quality Manager

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Certificate No.: TC-5548

DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE (IS 2386 (Part 1) 1963 (RA 2007))

Lab ID : CP-RW-2022-06-23-45 Date: 13-04-2022
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Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 11-04-2022
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test : 11-04-2022

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	10.2	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	11.9	
Combined Flakiness and Elongation Index for WMM	22.1	

* The results obtained are satisfactory as per standard requirements.

2022/04/13
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2022/04/13
Assistant Engineer
Byatarayanapura Sub Division
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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE (IS 2386 (Part 1) 1963 (RA 2007))

Lab ID : CP-RW-2022-06-23-45 Date: 13-04-2022
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Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel
Pillgowda Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 11-04-2022
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test : 11-04-2022

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	10.4%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.8%	
Combined Flakiness and Elongation Index for WMM	23.2%	

* The results obtained are satisfactory as per standard requirements.

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20.04.2022
20.04.2022

[Handwritten signature]
Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P. Bangalore-560024



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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE (IS 2386 (Part 1) 1963 (RA 2007))

Date: 16-04-2022

Lab ID : CP-RW-2022-06-23-45
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli
Saraipalya and Bharathnagara and Surrounding Area in Ward No 06
Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI
No 109,110,111. Comprehensive Development and Improvements to
Roads and Drains Rachenahalli and Surrounding Area in Ward No 6
and 7 Byatarayanapura Sub Division Package-2 (Old Annuxure) Go
SI No 112 and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel
Pillgowda Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 14-04-2022
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test : 14-04-2022

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	14.2	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	10.3	
Combined Flakiness and Elongation Index for WMM	24.6	

* The results obtained are satisfactory as per standard requirements.

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R KARTHIK RECHAN
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Quality Manager

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Certificate No.: TC-5548

DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE (IS 2386 (Part 1) 1963 (RA 2007))

Lab ID : CP-RW-2022-06-23-45 Date: 16-04-2022
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli
Saraipalya and Bharathnagara and Surrounding Area in Ward No 06
Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI
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Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel
Pillgowda Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 14-04-2022
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test : 14-04-2022

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	9.4	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	16.0	
Combined Flakiness and Elongation Index for WMM	25.4	

* The results obtained are satisfactory as per standard requirements.

2022/04/16
Assistant Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024



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Sig.....
Date.....
KARTHIK RECHAN
Authorized Signatory
Quality Manager

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Certificate No.: TC-5548

DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE (IS 2386 (Part 1) 1963 (RA 2007))

Date: 16-04-2022

Lab ID : CP-RW-2022-06-23-45
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli
Saraipalya and Bharathnagara and Surrounding Area in Ward No 06
Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI
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and 7 Byatarayanapura Sub Division Package-2 (Old Annuxure) Go
SI No 112 and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel
Pillegowda Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 14-04-2022
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test : 14-04-2022

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	16.0	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	10.3	
Combined Flakiness and Elongation Index for WMM	26.3	

* The results obtained are satisfactory as per standard requirements.

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20.05.20
Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P. Bangalore-560024
Page 1/1
End of Report*



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Certificate No.: TC-5548

Format No: CP/TF/01

TEST REPORT ON BITUMEN

Lab ID : CP-RW-2022-06-23-45 Date: 04-05-2022
Project Name : Package-3. Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli Saraipalya
and Bharathnagara and Surrounding Area in Ward No 06 Byatarayanapura
Sub Division Package-3 (Old Annuxure-2) Go SI No 109,110,111.
Comprehensive Development and Improvements to Roads and Drains
Rachenahalli and Surrounding Area in Ward No 6 and 7 Byatarayanapura
Sub Division Package-2 (Old Annuxure) Go SI No 112 and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013
Customer's Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 02-05-2022
Sample Type : Bitumen
Reference to BIS codes : IS: 1201-2021, IS: 1202-1220(1978) (Reaffirmed-2019)
Date of test : 02-05-2022

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	64	60 to 70
2	Softening Point, °C	51.2	Min. 40°C
3	Ductility, cm	98	Min. 75cm
4	Flash point, °C	245	Min. 220°C
	Fire point, °C	272	

* The results obtained are satisfactory as per standard requirements.

Handwritten signature and stamp
20.05.2022
Assistant Engineer
Byatarayanapura Sub Division
B.B.M.P. Bangalore-560029

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20.05.2022
Assistant Engineer
Byatarayanapura Sub Division
B.B.M.P. Bangalore-560029



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Quality Manager

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

TEST RESULTS OF GRADATION FOR DBM (IS 2386:(Part 1) 1963 (RA2011))

Date: 14-05-2022

Lab ID : CP-RW-2022-06-23-45
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli Saraipalya and Bharathnagara and Surrounding Area in Ward No 06 Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI No 109,110,111.
Comprehensive Development and Improvements to Roads and Drains Rachenahalli and Surrounding Area in Ward No 6 and 7 Byatarayanapura Sub Division Package-2 (Old Annuxure) Go SI No 112 and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 12-05-2022
Type of Mix : DBM-Plant (Dense Bituminous Macadam)
Date of test : 12-05-2022
Weight of Sample : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-10 (grading -2)
37.5	0	0	0	100	100
26.5	250	250	5.00	95.00	90-100
19	350	600	12.00	88.00	71-95
13.2	450	1050	21.00	79.00	56-80
4.75	1750	2800	56.00	44.00	38-54
2.36	400	3200	64.00	36.00	28-42
0.3	1350	4550	91.00	9.00	7-21
0.075	250	4800	96.00	4.00	2-8
PAN	200	5000	0.00	0	0

* The results obtained are satisfactory as per standard requirements.

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Assistant Engineer
Byatarayanapura Sub Division
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Page 2/1
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TEST RESULTS OF GRADATION FOR DBM (IS 2386:(Part 1) 1963 (RA2011))

Date: 14-05-2022

Lab ID : CP-RW-2022-06-23-45
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli Saraipalya
and Bharathnagara and Surrounding Area in Ward No 06 Byatarayanapura
Sub Division Package-3 (Old Annuxure-2) Go SI No 109,110,111.
Comprehensive Development and Improvements to Roads and Drains
Rachenahalli and Surrounding Area in Ward No 6 and 7 Byatarayanapura
Sub Division Package-2 (Old Annuxure) Go SI No 112 and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 12-05-2022
Type of Mix : DBM-Plant (Dense Bituminous Macadam)
Date of test : 12-05-2022
Weight of Sample : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-10 (grading -2)
37.5	0	0	0	100	100
26.5	153	153	3.06	96.94	90-100
19	1054	1207	24.14	75.86	71-95
13.2	584	1791	35.82	64.18	56-80
4.75	1788	3579	71.58	28.42	38-54
2.36	598	4177	83.54	16.46	28-42
0.3	292	4469	89.38	10.62	7-21
0.075	186	4655	93.10	6.90	2-8
PAN	345	5000	0.00	0	0

* The results obtained are satisfactory as per standard requirements.

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Assistant Engineer Sub Division
Byatarayanapura Sub Division
B.B.M.P. Bangalore-560013



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Certificate No.: TC-5548

PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR DENSE BITUMINOUS MACADAM

Date: 16-05-2022

Lab ID : CP-RW-2022-06-23-45
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli Saraipalya and
Bharathnagara and Surrounding Area in Ward No 06 Byatarayanapura Sub Division
Package-3 (Old Annuxure-2) Go SI No 109,110,111. Comprehensive Development
and Improvements to Roads and Drains Rachenahalli and Surrounding Area in
Ward No 6 and 7 Byatarayanapura Sub Division Package-2 (Old Annuxure) Go SI
No 112 and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda Layout,
Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 12-05-2022
Type of Mix : DBM (Dense Bituminous Macadam)
Date of test : 12-05-2022

Table 500-6 : Physical Requirements for Coarse Aggregate for Dense Bituminous Macadam

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	13.0	Combined Flakiness & Elongation Index for DBM is Maximum 35%	IS:2386 Part I
	Elongation Index	8.0		
Strength	Aggregate Impact Value	23.0	Maximum 30%	IS:2386 Part IV
Specific gravity	Specific gravity	2.58	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.38	Maximum 2%	IS:2386 Part III

* The results obtained are satisfactory as per standard requirements.

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Byatarayanapura Sub Division
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Page 1/1
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Certificate No.: TC-5548

PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR DENSE BITUMINOUS MACADAM

Date: 16-05-2022

Lab ID : CP-RW-2022-06-23-45
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli Saraipalya and
Bharathnagara and Surrounding Area in Ward No 06 Byatarayanapura Sub Division
Package-3 (Old Annuxure-2) Go SI No 109,110,111. Comprehensive Development
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Ward No 6 and 7 Byatarayanapura Sub Division Package-2 (Old Annuxure) Go SI
No 112 and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda Layout,
Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 12-05-2022
Type of Mix : DBM (Dense Bituminous Macadam)
Date of test : 12-05-2022

Table 500-6 : Physical Requirements for Coarse Aggregate for Dense Bituminous Macadam

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	14.2	Combined Flakiness & Elongation Index for DBM is Maximum 35%	IS:2386 Part I
	Elongation Index	11.4		
Strength	Aggregate Impact Value	22.8	Maximum 30%	IS:2386 Part IV
Specific gravity	Specific gravity	2.62	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.28	Maximum 2%	IS:2386 Part III

* The results obtained are satisfactory as per standard requirements.

20.05.22
20.05.22

20.05.22
Assistant Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024
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Certificate No.: TC-5548

TESTS RESULTS ON STABILITY OF MIX

Lab ID : CP-RW-2022-06-23-45 Date: 16-05-2022
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli
Saraipalya and Bharathnagara and Surrounding Area in Ward No 06
Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI No
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Byatarayanapura Sub Division Package-2 (Old Annuxure) Go SI No
112 and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 12-05-2022
Type of Mix : DBM (Dense Bituminous Mecadam)
Date of test : 12-05-2022

The results of the tests conducted on the Dense Bituminous Macadam mix sample are as follow				
Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.29	11.82	9KN(Min)
2	Marshal flow at 60°C, mm	3.54	3.87	2-4
3	Percent air Voids	4.56	4.17	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.54	14.76	13-15
5	Percent Voids filled with Bitumen(VFB %)	68.98	70.28	65-75
6	Density, g/cc	2.42	2.40	—

* The results obtained are satisfactory as per standard requirements.

2022/05/16
Byatarayanapura Sub Division
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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

TESTS RESULTS ON STABILITY OF MIX

Lab ID : CP-RW-2022-06-23-45 Date: 16-05-2022
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli
Saraipalya and Bharathnagara and Surrounding Area in Ward No 06
Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI No
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Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 12-05-2022
Type of Mix : DBM (Dense Bituminous Macadam)
Date of test : 12-05-2022

The results of the tests conducted on the Dense Bituminous Macadam mix sample are as follow				
Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.98	11.49	9KN(Min)
2	Marshal flow at 60°C, mm	3.18	3.25	2-4
3	Percent air Voids	4.49	4.25	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.29	14.51	13-15
5	Percent Voids filled with Bitumen(VFB %)	67.54	68.43	65-75
6	Density, g/cc	2.41	2.41	-

* The results obtained are satisfactory as per standard requirements.

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20.05.2022

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20.05.2022
Byatarayanapura Sub Division
B.B.M.P Bangalore-560013
Page 1/1
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Certificate No.: TC-5548

4, 7TH MAIN MALESWARA, BANGALORE - 3

TESTS RESULTS ON STABILITY OF MIX

Date: 16-05-2022

Lab ID : CP-RW-2022-06-23-45
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli
Sarapalya and Bharathnagara and Surrounding Area in Ward No 06
Byataryanapura Sub Division Package-3 (Old Annuxure-2) Go SI No
109,110,111, Comprehensive Development and Improvements to Roads
and Drains Raichenahalli and Surrounding Area in Ward No 6 and 7
Byataryanapura Sub Division Package-2 (Old Annuxure) Go SI No
112 and 113.

Agency : M. S. Ram and Company, Prop. Sri C R Girish, No.12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013

Customer Reference : BBNP EE BTP WO 02 2021-22

Date of Receipt : 12-05-2022

Type of Mix : DBM (Dense Bituminous Macadam)

Date of test : 12-05-2022

The results of the tests conducted on the Dense Bituminous Macadam mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Specified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.98	11.49	9KN(Min)
2	Marshal flow at 60°C, mm	3.18	3.25	2-4
3	Percent air Voids	4.49	4.25	3-5
4	Percent Voids in mineral Aggregate (VMA %)	14.29	14.51	13-15
5	Percent Voids filled with Bitumen (VFB %)	67.54	68.43	65-75
6	Density, g/cc	2.41	2.41	-

* The results obtained are satisfactory as per standard requirements.

Signature of the Engineer
B. B. M. P. Bangalore - Field of Report



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Certificate No.: TC-5548

TEST REPORT OF AGGREGATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Date: 16-05-2022

Lab ID : CP-RW-2022-06-23-45
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli
Saraipalya and Bharathnagara and Surrounding Area in Ward No 06
Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI No
109,110,111. Comprehensive Development and Improvements to
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and 7 Byatarayanapura Sub Division Package-2 (Old Annuxure) Go SI
No 112 and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 12-05-2022
Type of Mix : DBM(Dense Bitumnous Macadam)
Date of test : 12-05-2022

Type of Binder : 60/70
% of Binder Used : 5.0%
Weight of Aggregate : 200.0 gm
Weight of Binder : 10.0 gm
Temperature of water bath : 40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.0	2.0	98.2	Minimum Retained Coating 95%
2	98.5	1.5		
3	98.0	2.0		

* The results obtained are satisfactory as per standard requirements.

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Byatarayanapura Sub Division
B B M P Bangalore



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R KARTHIK RECHAN
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Quality Manager

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Certificate No.: TC-5548

TEST REPORT OF AGGREGATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID : CP-RW-2022-06-23-45 Date: 16-05-2022 ✓
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli
Saraipalya and Bharathnagara and Surrounding Area in Ward No 06
Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI No
109,110,111. Comprehensive Development and Improvements to
Roads and Drains Rachenahalli and Surrounding Area in Ward No 6
and 7 Byatarayanapura Sub Division Package-2 (Old Annuxure) Go SI
No 112 and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 12-05-2022
Type of Mix : DBM(Dense Bitumnous Macadam)
Date of test : 12-05-2022
Type of Binder : 60/70
% of Binder Used : 5.0%
Weight of Aggregate : 200.0 gm
Weight of Binder : 10.0 gm
Temperature of water bath : 40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	99.0	1.0	98.5	Minimum Retained Coating 95%
2	98.5	1.5		
3	98.0	2.0		

* The results obtained are satisfactory as per standard requirements.



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Quality Manager

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Certificate No.: TC-5548

TEST RESULTS OF GRADATION FOR BC IS 2386 (Part 1) 1963 (RA 2007)

Lab ID : CP-RW-2022-06-23-45 Date: 30-05-2022
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli Saraipalya and
Bharathnagara and Surrounding Area in Ward No 06 Byatarayanapura Sub
Division Package-3 (Old Annuxure-2) Go SI No 109,110,111.
Comprehensive Development and Improvements to Roads and Drains
Rachenahalli and Surrounding Area in Ward No 6 and 7 Byatarayanapura
Sub Division Package-2 (Old Annuxure) Go SI No 112 and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 27-05-2022
Type of Mix : BC-Plant (Bituminous Concrete)
Date of test : 27-05-2022
Oven Dry Weight : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Secified limits as per MORTH specification table 500-17(grading-2)
19	0	0	0.0	100.0	100
13.2	89	89	1.8	98.2	90-100
9.5	702	791	15.8	84.2	70-88
4.75	895	1686	33.7	66.3	53-71
2.36	587	2273	45.5	54.5	42-58
1.18	492	2765	55.3	44.7	34-48
0.6	503	3268	65.4	34.6	26-38
0.3	528	3796	75.9	24.1	18-28
0.15	458	4254	85.1	14.9	12-20
0.075	350	4604	92.1	7.9	4-10
PAN	396	5000	100	0.0	0

* The results obtained are satisfactory as per standard requirements.

27/05/2022
27/05/2022



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Sig.....
Date.....

KARTHIK RECHAN
Authorized Signatory
Quality Manager

20/05/2022
By.....
B.B.M.P Bangalore-560024
Page 1/1
of Report*

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Certificate No.: TC-5548

TEST RESULTS OF GRADATION FOR BC IS 2386 (Part 1) 1963 (RA 2007)

Lab ID : CP-RW-2022-06-23-45 Date: 30-05-2022
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli Saraipalya and
Bharathnagara and Surrounding Area in Ward No 06 Byatarayanapura Sub
Division Package-3 (Old Annuxure-2) Go SI No 109,110,111.
Comprehensive Development and Improvements to Roads and Drains
Rachenahalli and Surrounding Area in Ward No 6 and 7 Byatarayanapura
Sub Division Package-2 (Old Annuxure) Go SI No 112 and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 27-05-2022
Type of Mix : BC-Plant (Bituminous Concrete)
Date of test : 27-05-2022
Oven Dry Weight : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-17(grading-2)
19	0	0	0.0	100.0	100
13.2	50	50	1.0	99.0	90-100
9.5	950	1000	20.0	80.0	70-88
4.75	1100	2100	42.0	58.0	53-71
2.36	650	2750	55.0	45.0	42-58
1.18	450	3200	64.0	36.0	34-48
0.6	200	3400	68.0	32.0	26-38
0.3	500	3900	78.0	22.0	18-28
0.15	100	4000	80.0	20.0	12-20
0.075	650	4650	93.0	7.0	4-10
PAN	350	5000	100	0.0	0

* The results obtained are satisfactory as per standard requirements.

20.05.2022
Asst. Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024
Page 1/1
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Certificate No.: TC-5548

TEST REPORT OF AGGREGATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID : CP-RW-2022-06-23-45 Date: 30-05-2022 ✓
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli
Saraipalya and Bharathnagara and Surrounding Area in Ward No 06
Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI No
109,110,111. Comprehensive Development and Improvements to
Roads and Drains Rachenahalli and Surrounding Area in Ward No 6
and 7 Byatarayanapura Sub Division Package-2 (Old Annuxure) Go SI
No 112 and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 27-05-2022
Type of Mix : BC(Bitumenous Concrete)
Date of test : 27-05-2022

Type of Binder : 60/70
% of Binder Used : 5.0%
Weight of Aggregate : 200.0 gm
Weight of Binder : 10.0 gm
Temperature of water bath : 40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.5	1.5	98.3	Minimum Retained Coating 95%
2	98.5	1.5		
3	98.0	2.0		

* The results obtained are satisfactory as per standard requirements.

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Quality Manager

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Byatarayanapura Sub Division
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Certificate No.: TC-5548

TEST REPORT OF AGGREGATE STRIPPING VALUE OF ROAD AGGREGATE (IS:6241)

Date: 30-05-2022

Lab ID : CP-RW-2022-06-23-45
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli
Saraipalya and Bharathnagara and Surrounding Area in Ward No 06
Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI No
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Roads and Drains Rachenahalli and Surrounding Area in Ward No 6
and 7 Byatarayanapura Sub Division Package-2 (Old Annuxure) Go SI
No 112 and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 27-05-2022
Type of Mix : BC(Bitumenous Concrete)
Date of test : 27-05-2022

Type of Binder : 60/70
% of Binder Used : 5.0%
Weight of Aggregate : 200.0 gm
Weight of Binder : 10.0 gm
Temperature of water bath : 40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.9	1.1	98.1	Minimum Retained Coating 95%
2	98.6	1.4		
3	96.7	3.3		

* The results obtained are satisfactory as per standard requirements.

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Quality Manager

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Certificate No.: TC-5548

PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS CONCRETE

Lab ID : CP-RW-2022-06-23-45 Date: 30-05-2022

Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli Saraipalya and Bharathnagara and Surrounding Area in Ward No 06 Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI No 109,110,111. Comprehensive Development and Improvements to Roads and Drains Rachenahalli and Surrounding Area in Ward No 6 and 7 Byatarayanapura Sub Division Package-2 (Old Annuxure) Go SI No 112 and 113.

Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda Layout, Ramachandrapura, Bangalore-560013

Customer Reference : BBMP/EE/BTP/WO/02/2021-22

Date of Receipt : 27-05-2022

Type of Mix : BC (Bituminous Concrete)

Date of test : 27-05-2022

Table 500-16 : Physical Requirements for Coarse Aggregate for Bituminous Concrete

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	12.4	Combined Flakiness & Elongation Index for BC is Maximum 35%	IS:2386 Part I
	Elongation Index	11.8		
Strength	Aggregate Impact Value	22.1	Maximum 24%	IS:2386 Part IV
Specific gravity	Specific gravity	2.68	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.21	Maximum 2%	IS:2386 Part III

* The results obtained are satisfactory as per standard requirements.

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Assistant Engineer
Byatarayanapura Sub Division
B.B.M.P. Bangalore-560024

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End of Report



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Certificate No.: TC-5548

PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS CONCRETE

Lab ID : CP-RW-2022-06-23-45 Date: 30-05-2022

Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli Saraipalya and Bharathnagara and Surrounding Area in Ward No 06 Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI No 109,110,111. Comprehensive Development and Improvements to Roads and Drains Rachenahalli and Surrounding Area in Ward No 6 and 7 Byatarayanapura Sub Division Package-2 (Old Annuxure) Go SI No 112 and 113.

Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda Layout, Ramachandrapura, Bangalore-560013

Customer Reference : BBMP/EE/BTP/WO/02/2021-22

Date of Receipt : 27-05-2022

Type of Mix : BC (Bituminous Concrete)

Date of test : 27-05-2022

Table 500-16 : Physical Requirements for Coarse Aggregate for Bituminous Concrete

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	8.49	Combined Flakiness & Elongation Index for BC is Maximum 35%	IS:2386 Part I
	Elongation Index	11.53		
Strength	Aggregate Impact Value	22.15	Maximum 24%	IS:2386 Part IV
Specific gravity	Specific gravity	2.60	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	1.28	Maximum 2%	IS:2386 Part III

* The results obtained are satisfactory as per standard requirements.

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Quality Manager

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Assistant Executive Engineer
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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

TESTS RESULTS ON STABILITY OF MIX

Lab ID : CP-RW-2022-06-23-45 Date: 30-05-2022
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli
Saraipalya and Bharathnagara and Surrounding Area in Ward No 06
Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI No
109,110,111. Comprehensive Development and Improvements to
Roads and Drains Rachenahalli and Surrounding Area in Ward No 6
and 7 Byatarayanapura Sub Division Package-2 (Old Annuxure) Go SI
No 112 and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 27-05-2022
Type of Mix : BC (Bituminous Concrete)
Date of test : 27-05-2022

The results of the tests conducted on the Bituminous Concrete mix sample are as follow				
Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshall Stability at 60°C, KN	11.14	11.13	10KN(min)
2	Marshall flow at 60°C, mm	3.52	3.51	2-4
3	Percent air Voids	4.82	4.83	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.28	14.26	13-15
5	Percent Voids filled with Bitumen(VFB %)	71.87	71.63	65-75
6	Density, g/cc	2.25	2.26	-

* The results obtained are satisfactory as per standard requirements.

2022/05/30
Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024



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Date.....
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Certificate No.: TC-5548

TESTS RESULTS ON STABILITY OF MIX

Lab ID : CP-RW-2022-06-23-45 Date: 30-05-2022
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli
Saraipalya and Bharathnagara and Surrounding Area in Ward No 06
Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI No
109,110,111. Comprehensive Development and Improvements to
Roads and Drains Rachenahalli and Surrounding Area in Ward No 6
and 7 Byatarayanapura Sub Division Package-2 (Old Annuxure) Go SI
No 112 and 113.
Agency : M.s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE BTP/WO 02 2021-22
Date of Receipt : 27-05-2022
Type of Mix : BC (Bituminous Concrete)
Date of test : 27-05-2022

The results of the tests conducted on the Bituminous Concrete mix sample are as follow				
Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	14.62	10.78	10KN(min)
2	Marshal flow at 60°C, mm	3.67	3.83	2-4
3	Percent air Voids	4.85	4.02	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.23	13.48	13-15
5	Percent Voids filled with Bitumen(VFB %)	75.26	67.30	65-75
6	Density, g/cc	2.24	2.25	-

* The results obtained are satisfactory as per standard requirements.

[Signature]
Assistant Executive Engr.
Byatarayanapura Sub Division
B.B.M.P. Bangalore-560024

Page 1/1
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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR DBM (IS 2386:(Part 1) 1963 (RA2011))

Lab ID : CP-RW-2022-06-23-45 Date: 04-06-22
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli Saraipalya
and Bharathnagara and Surrounding Area in Ward No 06
Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI No
109,110,111. Comprehensive Development and Improvements to Roads
and Drains Rachenahalli and Surrounding Area in Ward No 6 and 7
Byatarayanapura Sub Division Package-2 (Old Annuxure) Go SI No 112
and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 03-06-22
Type of Mix : DBM (Dense Bituminous Macadam)-Varma Layout - ACP House Road
Date of test : 03-06-22

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	477	476
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	4.6	4.8
4	Average percentage	%	4.7	

20.5.75
Assistant Engineer
Byatarayanapura Sub Division
B.B.M.P. Bangalore



FOR CIVIL Pro.
RKARTHIK RECHAN
Authorized Signatory
Quality Manager



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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

Lab ID : CP-RW-2022-06-23-45
AFTER EXTRACTION(Trail-1)

Date: 04-06-22

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH specification Table 500-10(grading -2)
					100
37.5	0	0	0	100.0	90-100
26.5	20	20	4.19	95.8	71-95
19	92	112	23.48	76.5	56-80
13.2	81	193	40.46	59.5	38-54
4.75	85	278	58.28	41.7	28-42
2.36	57	335	70.23	29.8	7-21
0.3	95	430	90.15	9.9	2-8
0.075	25	455	95.39	4.6	

AFTER EXTRACTION(Trail-2)

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH specification Table 500-10(grading -2)
					100
37.5	0	0	0	100.0	90-100
26.5	25	25	5.25	94.7	71-95
19	93	118	24.79	75.2	56-80
13.2	74	192	40.34	59.7	38-54
4.75	82	274	57.56	42.4	28-42
2.36	56	330	69.33	30.7	7-21
0.3	83	413	86.76	13.2	2-8
0.075	32	445	93.49	6.5	

* The results obtained are satisfactory as per standard requirements.

Assistant Engineer
Byatarayanapura Sub Division
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Page 2/2
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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR DBM (IS 2386:(Part 1) 1963 (RA2011))

Lab ID : CP-RW-2022-06-23-45 Date: 04-06-22 ✓
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli Saraipalya
and Bharathnagara and Surrounding Area in Ward No 06
Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI No
109,110,111. Comprehensive Development and Improvements to Roads
and Drains Rachenahalli and Surrounding Area in Ward No 6 and 7
Byatarayanapura Sub Division Package-2 (Old Annuxure) Go SI No 112
and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 03-06-22 ✓
Type of Mix : DBM (Dense Bituminous Macadam)-Varma Layout - ACP House Road
Date of test : 03-06-22

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	477	478
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	4.6	4.4
4	Average percentage	%	4.5	

23557
Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

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Authorized Signatory
Quality Manager

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

Lab ID : CP-RW-2022-06-23-45
AFTER EXTRACTION(Trail-1)

Date: 04-06-22

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH specification Table 500-10(grading -2)
Weight of Sample(gm) : 477					
37.5	0	0	0	100.0	100
26.5	18	18	3.77	96.2	90-100
19	101	119	24.95	75.1	71-95
13.2	73	192	40.25	59.7	56-80
4.75	86	278	58.28	41.7	38-54
2.36	59	337	70.65	29.4	28-42
0.3	86	423	88.68	11.3	7-21
0.075	29	452	94.76	5.2	2-8

AFTER EXTRACTION(Trail-2)

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH specification Table 500-10(grading -2)
Weight of Sample(gm) : 478					
37.5	0	0	0	100.0	100
26.5	20	20	4.18	95.8	90-100
19	102	122	25.52	74.5	71-95
13.2	72	194	40.59	59.4	56-80
4.75	85	279	58.37	41.6	38-54
2.36	61	340	71.13	28.9	28-42
0.3	83	423	88.49	11.5	7-21
0.075	31	454	94.98	5.0	2-8

* The results obtained are satisfactory as per standard requirements.

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20.06.22



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Sig.....

Date.....

R. KARTHIK RECHAN

Authorized Signatory

Quality Manager

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Certificate No.: TC-5548

TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR DBM (IS 2386:(Part 1) 1963 (RA2011))

Lab ID : CP-RW-2022-06-23-45 Date: 08-06-22
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli Saraipalya
and Bharathnagara and Surrounding Area in Ward No 06
Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI No
109,110,111. Comprehensive Development and Improvements to Roads
and Drains Rachenahalli and Surrounding Area in Ward No 6 and 7
Byatarayanapura Sub Division Package-2 (Old Annuxure) Go SI No 112
and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 07-06-22
Type of Mix : DBM (Dense Bituminous Macadam)-Varma Layout - 1st Cross Road
Date of test : 07-06-22

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	476	477
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	4.8	4.6
4	Average percentage	%	4.7	



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Quality Manager

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Certificate No.: TC-5548

Lab ID : CP-RW-2022-06-23-45

Date: 08-06-22

AFTER EXTRACTION(Trail-1)

Weight of Sample(gm) : 476

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH specification Table 500-10(grading -2)
37.5	0	0	0	100.0	100
26.5	23	23	4.83	95.2	90-100
19	98	121	25.42	74.6	71-95
13.2	75	196	41.18	58.8	56-80
4.75	88	284	59.66	40.3	38-54
2.36	55	339	71.22	28.8	28-42
0.3	81	420	88.24	11.8	7-21
0.075	30	450	94.54	5.5	2-8

AFTER EXTRACTION(Trail-2)

Weight of Sample(gm) : 477

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH specification Table 500-10(grading -2)
37.5	0	0	0	100.0	100
26.5	25	25	5.24	94.8	90-100
19	99	124	26.00	74.0	71-95
13.2	85	209	43.82	56.2	56-80
4.75	82	291	61.01	39.0	38-54
2.36	42	333	69.81	30.2	28-42
0.3	80	413	86.58	13.4	7-21
0.075	32	445	93.29	6.7	2-8

* The results obtained are satisfactory as per standard requirements.

Handwritten signature and date: 20.05.22



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R. KARTHIK RECHAN
Authorized Signatory
Quality Manager

Handwritten signature: 20-05-22
Assistant Executive Engineer
Byatarayanapura Sub Division
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**TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR DBM
(IS 2386:(Part 1) 1963 (RA2011))**

Lab ID : CP-RW-2022-06-23-45 Date: 08-06-22 ✓
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli Saraipalya
and Bharathnagara and Surrounding Area in Ward No 06
Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI No
109,110,111. Comprehensive Development and Improvements to Roads
and Drains Rachenahalli and Surrounding Area in Ward No 6 and 7
Byatarayanapura Sub Division Package-2 (Old Annuxure) Go SI No 112
and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 07-06-22
Type of Mix : DBM (Dense Bituminous Macadam)-Varma Layout - 1st Cross Road
Date of test : 07-06-22

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	477	475
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	4.6	5.0
4	Average percentage	%	4.8	

2022/06/22
Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P. Bangalore-560024

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Lab ID

:

CP-RW-2022-06-23-45

Date: 08-06-22

AFTER EXTRACTION(Trail-1)

Weight of Sample(gm)

:

477

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH specification Table 500-10(grading -2)
37.5	0	0	0	100.0	100
26.5	32	32	6.71	93.3	90-100
19	86	118	24.74	75.3	71-95
13.2	82	200	41.93	58.1	56-80
4.75	84	284	59.54	40.5	38-54
2.36	54	338	70.86	29.1	28-42
0.3	78	416	87.21	12.8	7-21
0.075	28	444	93.08	6.9	2-8

AFTER EXTRACTION(Trail-2)

Weight of Sample(gm)

:

475

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH specification Table 500-10(grading -2)
37.5	0	0	0	100.0	100
26.5	35	35	7.37	92.6	90-100
19	84	119	25.05	74.9	71-95
13.2	85	204	42.95	57.1	56-80
4.75	81	285	60.00	40.0	38-54
2.36	52	337	70.95	29.1	28-42
0.3	76	413	86.95	13.1	7-21
0.075	25	438	92.21	7.8	2-8

* The results obtained are satisfactory as per standard requirements.

Handwritten signature and date



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R. KARTHIK RECHAN

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Quality Manager

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Certificate No.: TC-5548

**TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR DBM
(IS 2386:(Part 1) 1963 (RA2011))**

Lab ID : CP-RW-2022-06-23-45 Date: 13-06-22
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli Saraipalya
and Bharathnagara and Surrounding Area in Ward No 06
Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI No
109,110,111. Comprehensive Development and Improvements to Roads
and Drains Rachenahalli and Surrounding Area in Ward No 6 and 7
Byatarayanapura Sub Division Package-2 (Old Annuxure) Go SI No 112
and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 11-06-22
Type of Mix : DBM (Dense Bituminous Macadam)-Varma Layout - 2nd Cross Road
Date of test : 11-06-22

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	477	478
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	4.6	4.4
4	Average percentage	%	4.5	



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Sig.
Date.
KARTHIK RECHAN
Authorized Signatory
Quality Manager

20.06.22
Asst. Engineer
Byatarayanapura Sub Division
B.B.M.P. Bangalore-560024

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Certificate No.: TC-5548

Lab ID : CP-RW-2022-06-23-45

Date: 13-06-22

AFTER EXTRACTION(Trail-1)

Weight of Sample(gm) : 477

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH specification Table 500-10(grading -2)
37.5	0	0	0	100.0	100
26.5	7	7	1.47	98.5	90-100
19	47	54	11.32	88.7	71-95
13.2	89	143	29.98	70.0	56-80
4.75	133	276	57.86	42.1	38-54
2.36	54	330	69.18	30.8	28-42
0.3	91	421	88.26	11.7	7-21
0.075	42	463	97.06	2.9	2-8

AFTER EXTRACTION(Trail-2)

Weight of Sample(gm) : 478

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH specification Table 500-10(grading -2)
37.5	0	0	0	100.0	100
26.5	35	35	7.32	92.7	90-100
19	84	119	24.90	75.1	71-95
13.2	85	204	42.68	57.3	56-80
4.75	81	285	59.62	40.4	38-54
2.36	52	337	70.50	29.5	28-42
0.3	76	413	86.40	13.6	7-21
0.075	32	445	93.10	6.9	2-8

* The results obtained are satisfactory as per standard requirements.

Handwritten signature and date: 13.06.22



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Quality Manager

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Certificate No.: TC-5548

**TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR DBM
(IS 2386:(Part 1) 1963 (RA2011))**

Lab ID : CP-RW-2022-06-23-45 Date: 13-06-22
Project Name : Package-3, Includes 5 Works
Improvements to Roads and Drains at Thanisandra Dasarahalli Saraipalya
and Bharathnagara and Surrounding Area in Ward No 06
Byatarayanapura Sub Division Package-3 (Old Annuxure-2) Go SI No
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and Drains Rachenahalli and Surrounding Area in Ward No 6 and 7
Byatarayanapura Sub Division Package-2 (Old Annuxure) Go SI No 112
and 113.
Agency : M/s. Ram and Company, Prop. Sri C R Girish, No:12, Patel Pillegowda
Layout, Ramachandrapura, Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/02/2021-22
Date of Receipt : 11-06-22
Type of Mix : DBM (Dense Bituminous Macadam)-Varma Layout - 1st Cross Road
Date of test : 11-06-22

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	502	502
2	Weight of the sample After extraction	B	479	478
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	4.6	4.8
4	Average percentage	%	4.7	



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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

Lab ID

1

CP-RW-2022-06-23-45

Date: 13-06-22

AFTER EXTRACTION(Trail-1)

Weight of Sample(gm)

1

479

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH specification Table 500-10(grading -2)
37.5	0	0	0	100.0	100
20.5	6	6	1.25	98.7	90-100
19	46	52	10.86	89.1	71-95
13.2	90	142	29.65	70.4	56-80
4.75	135	277	57.83	42.2	38-54
2.36	55	332	69.31	30.7	28-42
0.3	92	424	88.52	11.5	7-21
0.075	45	469	97.91	2.1	2-8

AFTER EXTRACTION(Trail-2)

Weight of Sample(gm)

1

478

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH specification Table 500-10(grading -2)
37.5	0	0	0	100.0	100
20.5	3	3	0.63	99.4	90-100
19	55	58	12.13	87.9	71-95
13.2	101	159	33.26	66.7	56-80
4.75	100	259	54.18	45.8	38-54
2.36	81	340	71.13	28.9	28-42
0.3	75	415	86.82	13.2	7-21
0.075	46	461	96.44	3.6	2-8

* The results obtained are satisfactory as per standard requirements.

Handwritten signature and date: 13.06.22



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Sig.....
Date.....
R. KARTHIK RECHAN
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Quality Manager

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End of Report

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Asst. Manager (Sub Division)
B B M P Bangalore-560024

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